COMPLETE LISTING OF CLAIMS

IN ASCENDING ORDER WITH STATUS INDICATOR

1. (Currently Amended) An electrode structure, comprising:

a first layer of conductive material;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of conductive material formed on the ~~conductive~~ binding layer.

2. (Currently Amended) The electrode structure of claim 1, wherein the binding layer is conductive or at least semiconductive and is formed from an oxide layer by annealing the electrode structure to cause conductive material from the second layer to be chemisorbed into the oxide layer.

3. (Cancelled)

4. (Original) The electrode structure of claim 1, wherein the first layer is a metal that adheres to an oxide layer.

5. (Original) The electrode structure of claim 1, wherein the second layer is a metal that is diffusible into an said oxide and bonds to an oxide.

6. (Original) An electrode structure, comprising:

a first layer of conductive material;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer including a silicon dioxide formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of conductive material formed on the binding layer, wherein the conductive material of the second layer is selected to be diffusible into the binding layer to make the binding layer capable of conducting electrical current.

7. (Original) An electrode structure, comprising:

a first layer of conductive material;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a conductive binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of conductive material formed on the conductive binding layer, wherein the binding layer is selected to provide adhesion between the first and second layers to prevent the second layer from being forced out of the opening in the dielectric layer by forces created by a chemical/mechanical planarization process being applied to the electrode structure.

8. (Original) An electrode structure, comprising:

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a first layer of metallization;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of metallization formed on the binding layer.

9. (Original) The electrode structure of claim 8, wherein the first layer of metallization is one of tungsten and nickel,

10. (Original) The electrode structure of claim 8, wherein the second layer of metallization is one of silver and nickel.

11. (Currently Amended) The electrode structure of claim 8, wherein the binding layer is conductive or at least semiconductive and is formed from an oxide

layer by annealing the electrode structure to cause metal from the second layer to diffuse into the oxide layer.

12. (Original) An electrode structure, comprising:

a first layer of metallization;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; an

a second layer of metallization formed on the binding layer, wherein the binding layer is selected to provide adhesion between the first and second layers of metallization to prevent the second layer of metallization from being forced out of the opening in the dielectric layer by forces created by a chemical/mechanical planarization process being applied to the electrode structure to form an isolated metallization structure in the opening in the dielectric layer.

13. (Original) The electrode structure of claim 12, wherein the binding layer includes an oxide and a metal diff-used from the second layer into the oxide.

14. (Original) An electrode structure, comprising:

a first layer of one of tungsten, nickel and semiconductor material;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a conductive binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of silver formed on the binding layer, wherein the conductive binding layer includes an oxide and silver diffused from the second layer into the oxide.

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15. (Original) An electrode structure, comprising:

a first layer of metallization;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a conductive binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of metallization for-med on the conductive binding layer, wherein the conductive binding layer includes a silicon dioxide and metal diffused from the second layer by annealing the electrode structure at a selected temperature for a predetermined period of time.

16. (Original) The electrode structure of claim 15, wherein the second layer of metallization is silver and wherein the conductive binding layer includes an oxide and silver diffused from the second layer into the oxide to provide adhesion between

the first layer and the second layer during planarization to form a damascene silver layer in the opening.

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17. (Currently Amended) The electrode structure of claim 16, wherein said conductive binding layer is formed from TEOS and ~~the~~ said silver is diffused into the TEOS by annealing the electrode structure at a temperature of about 350° Celsius for about ten minutes.

18-39. (Withdrawn).

40. (Original) A semiconductor die, comprising:

a substrate; and

an integrated circuit supported by the substrate, wherein the integrated circuit includes at least one electrode, the at least one electrode including:

a first layer of conductive material;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of conductive material formed on the conductive binding layer.

41. (Original) A semiconductor die, comprising:

a substrate; and

an integrated circuit supported by the substrate, wherein the integrated circuit comprises at least one electrode structure, the at least one electrode structure including:

a first layer of metallization;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a conductive binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of metallization formed on the conductive binding layer, wherein the conductive binding layer includes a silicon dioxide and metal diffused from the second layer by annealing the electrode structure at a selected temperature for a predetermined period of time.

42. (Original) A semiconductor die, comprising:

a substrate; and

an integrated circuit formed on the substrate, wherein the integrated circuit comprises at least one electrode structure, the at least one electrode structure including:

a first layer of metallization;

a dielectric layer formed on a surface of the first layer;

an Opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of metallization formed on the binding layer, wherein the binding layer is selected to provide adhesion between the first and second layers of metallization to prevent the second layer of metallization from being forced out of the opening in the dielectric layer by forces created by a chemical/mechanical planarization process being applied to the electrode structure to form an isolated metallization structure formed in the opening in the dielectric layer.

43. (Original) A semiconductor die, comprising:

a substrate; and

an integrated circuit formed on the substrate, wherein the integrated circuit comprises at least one electrode structure, including:

a first layer of one of tungsten, nickel and polysilicon;

a dielectric layer formed on a surface of the first layer;

an opening formed in the dielectric layer to expose a portion of the surface of the first layer;

a conductive binding layer formed on the dielectric layer and on the exposed portion of the surface of the first layer; and

a second layer of silver formed on the binding layer, wherein the conductive binding layer includes a silicon dioxide and silver diffused from the second layer into the silicon dioxide to provide adhesion between the first layer and the second layer during planarization to form a damascene silver layer in the opening.

44-94. (Withdrawn).

95. (Original) An electrode structure, comprising:

a first layer of conductive material;

a binding layer formed on a surface of the first layer; and

a second layer of conductive material formed on the conductive binding layer.

96. (Original) The electrode structure of claim 95, wherein said second layer of conductive material is a metal layer and said binding layer comprises an oxide layer and metal from said second layer diffused into said oxide layer.

97-108. (Withdrawn).